

## CLAIMS

1. A sound barrier for reducing noise, the sound barrier comprising:  
  
an outer shell comprising at least one of a polyethylene, a thermoplastic, a thermoset, an elastomer, and a combination thereof; and  
  
5 a void defined therein, the void being at least partially filled with at least one of a sound-absorbing material, a shock-absorbing material and combination thereof.
2. The sound barrier of claim 1, wherein the outer shell comprises a thermoplastic and the thermoplastic comprises at least one of polystyrene (PS),  
10 polyethylene-terephthalate (PET), a polytetrafluoroethylene (PTFE), an unplasticized polyvinyl chloride (PVC), a plasticized polyvinyl chloride (pPVC), a polypropylene (PP), a polyamide (PA), and a combination thereof.
3. The sound barrier of claim 1, wherein the outer shell comprises a thermoset and the thermoset comprises at least one of a phenolic, melamine,  
15 unsaturated polyester, and a combination thereof.
4. The sound barrier of claim 1, wherein the outer shell comprises an elastomer and the elastomer comprises at least one of silicone rubber, natural rubber, polybutadiene, and a combination thereof.
5. The sound barrier of claim 1, wherein the outer shell further  
20 comprises a UV stabilizer.

6. The sound barrier of claim 1, wherein the void is at least partially filled with a sound-absorbing material and the sound-absorbing material comprises at least one of a polyethylene, a thermoplastic, a thermoset, an elastomer, and a combination thereof.

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7. The sound barrier of claim 6, wherein the void is at least partially filled with a sound-absorbing material and the sound-absorbing material comprises at least one of ground tire, gravel, sand, EPS foam, recycled carpet and combinations thereof.

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8. The sound barrier of claim 1, wherein the outer shell comprises at least one of low-density polyethylene, linear-low polyethylene, high-density polyethylene, medium-density polyethylene, cross-linked polyethylene and combinations thereof.

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9. A method of manufacturing a sound barrier, the method comprising:

molding at least one of a polyethylene, a thermoplastic, a thermoset, an elastomer, and a combination thereof to form a sound barrier having an outer shell and a void defined therein; and  
at least partially filling the void with a sound absorbing material.

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10. The method of claim 9, wherein the molding comprises at least one of rotational molding, blow molding, thermoforming, injection molding, co-injection molding, and combinations thereof.

11. The method of claim 9, wherein the molding comprises rotational molding.

12. The method of claim 9, wherein the sound barrier comprises a thermoplastic and the thermoplastic comprises at least one of polystyrene (PS), polyethylene-terephthalate (PET), a polytetrafluoroethylene (PTFE), an unplasticized polyvinyl chloride (PVC), a plasticized polyvinyl chloride (pPVC),  
5 a polypropylene (PP), a polyamide (PA), and a combination thereof.

13. The method of claim 9, wherein the sound barrier comprises a thermoset and the thermoset comprises at least one of a phenolic, melamine, unsaturated polyester, and combination thereof.

14. The method of claim 9, wherein the sound barrier comprises an elastomer and the elastomer comprises at least one of silicone rubber, natural  
10 rubber, polybutadiene, and a combination thereof.

15. The method of claim 9, wherein the sound barrier further comprises a UV stabilizer.

16. The method of claim 9, wherein the void is at least partially filled with at least one of a polyethylene, a thermoplastic, a thermoset, an elastomer, and  
15 a combination thereof.

17. The method of claim 9, wherein the void is at least partially filled with at least one of ground tire, gravel, sand, EPS foam, recycled carpet and  
20 combinations thereof.

18. The method of claim 9, wherein the outer shell comprises at least one of low-density polyethylene, linear-low polyethylene, high-density polyethylene, medium-density polyethylene, cross-linked polyethylene and combinations thereof.

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19. The method of claim 9, wherein the barrier reduces noise by at least about 5 dB in an area adjacent a noisy area when the sound barrier is placed therebetween.

20. A sound barrier for reducing noise, the sound barrier comprising at least one of a polyethylene, thermoplastic, a thermoset, an elastomer, and a combination thereof, and reducing noise by at least about 5 dB in an area adjacent a noisy area when the sound barrier is placed therebetween.

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